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Matthias Burghard, Carin Lamm, Candy Lenk, Ralf Weber

Art_Bastard & Color Boxes – Teaching Spatial Design in the Spectrum of Digital and Analog – (Re)presentation

1. Introduction

Teaching principles of spatial design to architects requires tools and media for the visualization of ideas. Visualizations are not only a means to present and communicate ideas, they are also instruments for stimulating the creative process itself – a doorway to new perspectives on ideas in development.

Since the arrival of 3D digital representation of space, the usefulness of the traditional architectural model in the design process has generated lively debate. At Dresden University's Institute for Spatial Design we use architectural representations both in digital and analog form, each serves a distinct purpose in the instruction of our students, depending on the respective design strategies. The results of two recent courses: Space, Color & Light and Art_Bastard: cross-media designing, provide examples of the virtues of each type of representation and their role in teaching. Furthermore, the potential interplay between both virtual and analogue representations is discussed.

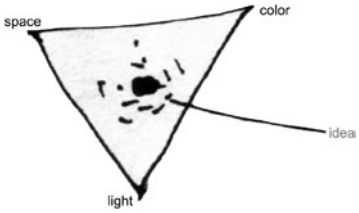


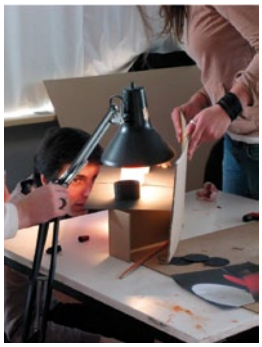
Figure 1

2. Space, Color & Light

The course focussed primarily on the triad of spatial geometry, surface and light as factors determining the atmosphere of architectural space. Students were to understand that the color one perceives is a result of the concurrence of light conditions and the specific reflectance of perceived surfaces. In addition, they were to learn that color perception is relational, i.e. largely influenced by the various color contrasts, such as the contrast of extension, which is a result of the size of the surfaces and the geometry of space.

One of the didactical methods used in studio was the transposition of specific atmospheric situations shown in one particular medium, e.g. drawing, photography, models, text, etc. into other respective media. Out of a sequence of seven exercises, three exercises will be discussed to illustrate the main learning outcomes of the course: (1) A picture of an existing space is transformed into a 3D model, and then subsequently transformed into a 2D picture of the model. (2) An existing architectural space is drawn in 2D in perspective, plan, etc, from which a 3D model is fabricated according to the set of sketches, and then a 2D picture

Figure 6 (left): Z-orse



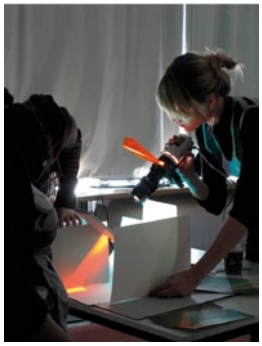


Figure 2: Exercise One "Speed Dating with"

Figure 3: Exercise Two "On Site"

of this model is made. (3) The atmosphere described in a text is represented as an image, forming the starting point for the construction of a 3D model, which subsequently is photographed in 2D. In all of the three exercises the distinctive qualities of each was to be preserved through the various transformative steps.

2.1 Exercise One: „Speed Dating with …"

Task: To transform a photo of an existing space into a model and thereafter transform it into a image that picks up the characteristics of the original photo. (2D → 3D → 2D)

The students were presented only with a photo of a space and had to construct this space as a quick working model. The next step was to take a photo of the illuminated model in order to grasp the core idea of the spatial atmosphere. A wide range of materials, paints and lights were available to work with, so that the students had to make choices for their design strategy.

Four pictures of interior spaces were introduced by the instructors: two in black & white and two in full color. The monochrome photos (Church of Light, Osaka, Tadao Ando & Crematory, Treptow, Axel Schultes) emphasized light and darkness, while the other two (La Tourette, Eveux at Lyon, Le Corbusier & St.Ignatius Chapel, Seattle, Steven Holl) focused on color. Students worked in groups of four and were given only 30 minutes to produce the models. After time was called, all working models were destroyed and all groups changed the table to meet the next dating partner: Tadao, Axel, Charles-Edouard or Steven.

Finally, the models were photographed, presented and briefly discussed. After two hours each student had worked with and reflected upon four distinct buildings and/or interior spaces. The format of the exercise proved suitable to approach the triad of spatial geometry, surfaces/color and light. It allowed students to communicate spatial design issues very effectively within a short period of time.

2.2 Exercise Two: „On Site"

Task: To produce a series of sketches of an existing architectural space and develop a working model based on these observations. Then take a photo of the model that depicts the characteristics of the architectural scene. (3D → 2D → 3D → 2D)

The modern architecture of the Deutsches Hygiene-Museum Dresden was chosen by the course leaders for its clear geometry, lightscapes and distinct color concept. In the first step the students had to capture the specific situation of the space only by sketching and without taking any photographs. This process required them to accurately imagine the space and internalize it. Taking additional notes of the kind of surfaces, the different sources of light and the colors used helped them later to recreate the space.

Back in the studio, each student made his own model according to the set of sketches drawn at the site. Afterwards they had to take photos of the illuminated working model to transfer the 3D spacial scene back into a 2D representation. The experience of the first exercise helped the students to achieve the transposition of „real" parameters by focusing upon the triad of geometry, surface color and light. On the one hand they learned to transpose atmospheres and spatial geometry into different media, and at the same time they learned to observe space in detail.

2.3 Exercise Three: „Literary Space"

Task: To respond to a atmosphere described in a text with an image, plans and diagrams. To construct an architectural model with these images as the starting point. Finally, to take a photograph of the model. (Text → 2D → 3D → 2D) (Three steps).

The instructors chose a chapter from Watermark by Joseph Brodsky as a text passage, in which the author vividly describes a man's visit to a typical Venice palace and his unusual adventure inside that building. To visualize the imagery within the text the students had to design an image of this scene – with free choice of media – and to draw both the diagram of the light and of the color sequence.

The second step was to focus on one significant atmospheric topic and to work out the visualization as the starting point for the construction of an architectural model. The third step was to take one or more photos of the model, not only to visualize the first image, but also to communicate an architectural idea in 3D and 2D media.

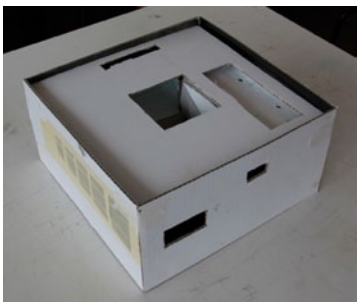


Figure 5: Exercise Three "Literary Space"

2.4 Conclusion

The didactic challenge was to teach color in architecture not just as pure color theory. Instead, the interdependency of light and color in architectural space was emphasized with the aid of separate exercises. By circulating within the triad of spatial geometry, surface color and light the complexity of the subject became tangible.

Our students learned to design an atmospheric space immediately with a fast change between 2D and 3D media within the process of transposition. At the same time the students trained and honed their observation and decision-making skills. Especially the method of „live-modeling" made a lasting impression on the students.

Teamwork facilitated communication and successfully generated discussions about atmosphere and color design amongst the students. The endoscopes used in our course were the digital cameras of the students. They served as the imaging method to precisely define color, light and surface parameters, but not to precisely design and construction details. Furthermore, the photos provide an additional means to document design stages as well as to communicate design intentions.

The endoscopic view was counterbalanced by the rough manual work with a range of analogue media and the physical presence of the working models. The studio results show that instead of digitizing the whole process, switching between different approaches expedites the process to frame an architectural idea.

3. Art_Bastard – cross-media designing

Spaces between elusive beauty and true being.

Spaces of dreams, fears, wistful longings and recollections are not new. Such spaces have always been hidden behind the real and physical space. This kind of virtual, poetic space superimposes and penetrates our idea and perception of the (real) world. Pure physical space can not be separated from the virtual space of imagination. Often we are not aware of this space behind the space, but it is ever-present.

These are Eclipse and Ulysses. A horse and a zebra. Their daughter Eclyse is a hybrid half zebra and half horse. A fairytale like animal with semi-real existence. Eclyse the „z-orse" was an inspiring allegory for our course with the name „artbastard"

Figure 6: Z-orse

The project „artbastard“ aimed to find out more about the area of contact between virtual and real space. The two kinds of spaces are not opposite to each other, they can merge to create another type of space. We tried to combine different spacial mediums (digital and analogue) with special properties to explore the character of the bounding surface between physical space and projection. The students had to make this visible in a final installation. They had to create a direct experience of space.

The purpose of this class was the design of architectural space through the superimposition of digital images on real spatial situations, thereby heightening the students' awareness for qualities of architectural space. At the same time, advanced principles of digital imaging (picture and video) were taught.

One of the principal goals of the course, the generation of a new quality of space through an alteration of dimensions and time was achieved through an inversion of the process of endoscopy – instead of representing real world situations, the real world was modified through means of projection. As a result, spatial qualities of both worlds – the virtual and the real – came together in the students' work. Results of the course were deliberately ephemeral, the appearance of space lasted only as long as the projection.

3.1 Work

As a foundation of the cross-media designing course, professional technical skills were taught. The students learned to handle digital videos and pictures, for example, methods of filtering, masking, blue-screen-technique, keying, data compressing, and decoding. Furthermore, they trained their ability to work with editing methods, and used webcam, beamer and notebook as space generating tools.

The second foundation for this course was the analysis of artistic mixed media projects and discussions with the artists.

The third foundation was the technique of developing a creative project. A playful usage of the technical and spacial instruments produced a mass of materials. During the project we tried to reach an experimental level of creative production. We constantly tested, retested and sorted out ideas.

The technical skills were trained in preparatory exercises. This practice helped the students to tackle the challenges of the course. Two exercises marked the first half of the course. One was

Figure 7: Work

the description of an everyday action in a short sequence. For example simultaneous actions during the preparation of a breakfast. The other exercise elaborates positions of the viewer (camera) in space.

3.2 Corridor

In this work of David Celek a sequence of a movement through a corridor was recorded. This clip was projected at the end of the same corridor. The result was a space that is able to oscillate in distance.

3.3 Curtain

Xavier Santodomingo and Maria Aparicio developed a semitransparent curtain that transforms a glass facade into a time-shift machine. Depending upon the position, the spectator will see either the live view or the prerecorded view.

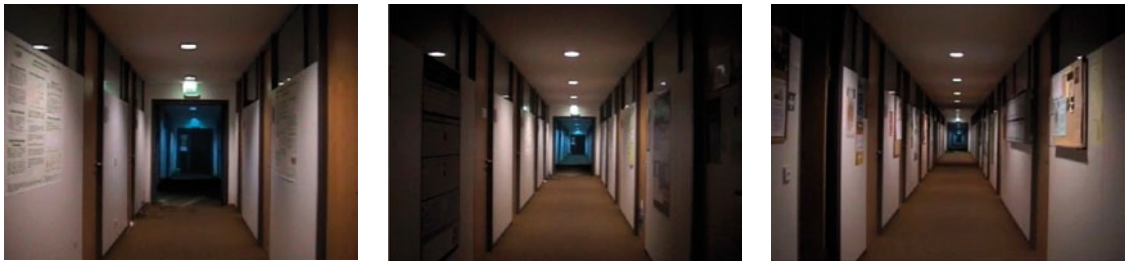
3.4 Outdoor space

Sebastian Wiesenhütter designed a precise projection that seem to animate the ground of a public space.

To revisit the similarities between the zebroid Eclyse and the analyzed type of space we draw upon an example from history. Zores were used by the colonial army of Emperor Wilhelm II. in Africa because the heat was too extreme for horses and zebras can not be domesticated. However, zebroids have a short lifespan and are not able to reproduce, therefore the creature is shortlived much like the spaces created in this exercise.

Without putting permanent resources like electricity and data streaming into the project the spacial-hybrids will fade

Figure 8: Corridor



immediately like a promise that cannot be kept. This oscillation between elusive beauty and true being create a new quality. It celebrates the ephemeral situation, the moment with a capital „M“ as the raison d'etre.

3.5 Conclusion

The methods used in the Space, Color & Light course allow for instant results through sketching or the quick construction of models. The core ideas of the spatial atmosphere can be communicated through the image, simple techniques of photography and drawing can be applied. Results of the individual steps can be immediately tested and corrected if necessary. The results remain in a stage of simulation however, because there is no real experience of an actual space.

By contrast, the methods used in the Art-Bastard course permit a direct experience of space, even displaying situations that are physically impossible in the actual world. The requirement for this experience is however is knowledge of complex visualization programs, an existing space as well as light conditions that allow for projection.

Figure 9: Curtain



Figure 10: Outdoor space